WHAT IS CLAIMED IS:

1.   A polymer powder produced by a process of milling or precipitating comprising a surface which is compact and not jagged.

2.   A polymer powder for producing a three-dimensional object by means of laser sintering, wherein the powder comprises a BET-surface which is smaller than 6 m²/g and at the same time the upper grain limit is below 100μm, the $D_{0.9}$-value is below 90 μm, and the $D_{0.5}$-value is below 60 μm and the particles comprise a basically spherical shape.

3.   A polymer powder according to claim 1 for producing a three-dimensional object by means of laser sintering, wherein the powder comprises a BET-surface which is smaller than 5 m²/g and at the same time the upper grain limit is below 100μm, the $D_{0.9}$-value is below 80 μm, and the $D_{0.5}$-value is below 55 μm and the particles comprise a basically spherical shape

4.   A powder according to claim 1, wherein the powder has a BET-surface having a value smaller than or equal to 4 m²/g.

5.   A powder according to claim 4, wherein the powder has a BET-surface having a value smaller than or equal to 3 m²/g.

6.   A powder according to claim 5, wherein the powder has a BET-surface having a value smaller than or equal to 2 m²/g.

7.   A powder for manufacturing a three-dimensional object by means of laser sintering according to claim 1, wherein a laser sintering refreshing factor is less than 50 percent.

8.   A powder according to claim 7, wherein the refreshing factor is less than 30 percent.

9.   A powder according to claim 1, wherein the powder is a polyamide powder.

10. A powder according to claim 1, wherein the powder consists of polyamide 11 or polyamide 12.

11. A powder according to claim 9, wherein the powder is a precipitated PA12 powder.

12. A polymer powder according to claim 2 for producing a three-dimensional object by means of laser sintering, wherein the powder comprises a BET-surface which is smaller than 5 m²/g and at the same time the upper grain limit is below 100µm, the $D_{0.9}$-value is below 80 µm, and the $D_{0.5}$-value is below 55 µm and the particles comprise a basically spherical shape

13. A powder according to claim 2, wherein the powder has a BET-surface having a value smaller than or equal to 4 m²/g.

14. A powder according to claim 13, wherein the powder has a BET-surface having a value smaller than or equal to 3 m²/g.

15. A powder according to claim 14, wherein the powder has a BET-surface having a value smaller than or equal to 2 m²/g.

16. A powder for manufacturing a three-dimensional object by means of laser sintering according to claim 2, wherein a laser sintering refreshing factor is less than 50 percent.

17. A powder according to claim 16, wherein the refreshing factor is less than 30 percent.

18. A powder according to claim 2, wherein the powder is a polyamide powder.

19. A powder according to claim 2, wherein the powder consists of polyamide 11 or polyamide 12.

20. A powder according to claim 18, wherein the powder is a precipitated PA12 powder.

21.   A method for producing a powder according to one of claims 1 to 20, wherein as a base material a plastic powder attained by means of precipitation or milling is used which is mechanically or mechanically-thermally mixed for at least one minute in an appropriate aggregate.

22.   A method according to claim 27 wherein the base material has at least one further powder component.

23.   A method according to claim 22 wherein a further powder component is a polymer powder or an additive.

24.   A method for manufacturing a three-dimensional object by means of laser sintering wherein subsequent layers of the object to be formed are subsequently solidified from solidifiable powder material in positions corresponding to the object and a powder according to claims 1 to 20 is used as powder material.

25.   A method according to claim 24 wherein the powder base material has at least one further powder component.

26.   A method according to claim 25 wherein a further powder component is a polymer powder or an additive.